

Appl. No.: 10/084,981
Amdt. dated 12/27/2005
Reply to Office action of 07/27/2005

Amendments to the Claims:

This listing of claims replaces all prior listings, and versions, of claims in the present application.

Listing of Claims:

1. (Currently Amended) An inverted F-antenna comprising:
an element; and wherein
the element is formed from conductor patterns on a plurality of layers including at least one buried layer of a multilayer PCB, and the conductor patterns are in stacked relation and interconnected through the PCB, and the conductor patterns comprise an F-shaped conductor pattern on one layer of the PCB and an I-, L- or F-shaped conductor pattern on the or each other layer, wherein the or each I-, L- or F-shaped conductor pattern comprises an upright substantially coextensive with the upright of the F-shaped conductor pattern.
2. (Original) An antenna according to claim 1, wherein the element is located at the edge of the PCB.
3. (Previously Presented) An antenna according to claim 1, wherein the PCB is apertured adjacent to the element.
4. (Previously Presented) An antenna according to claim 2, wherein the PCB is apertured adjacent to the element.
5. (Canceled)

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6. (Currently Amended) An antenna according to claim ~~[[5]]~~¹, wherein the or each I-, L- or F-shaped conductor pattern extends along the edge of the PCB.

7. (Original) An antenna according to claim 6, wherein the PCB is apertured between the "upright" of the F-shaped conductor pattern and a ground plane area.

8. (Previously Presented) An antenna according to claim 7, wherein the PCB has a slot between the upright of the F-shaped conductor pattern and a ground plane area.

9. (Original) An antenna according to claim 1, including an antenna ground plane comprising a plurality of vias connecting ground plane regions on respective PCB layers.

10. (Previously Presented) An antenna according to claim 9, wherein the conductor patterns are elongated and each longitudinally extend at the edge of the PCB.

11. (Original) An antenna according to claim 10, wherein the PCB is apertured adjacent to the element.

12. (Original) An antenna according to claim 11, wherein the PCB is apertured adjacent to the element.

13. (Previously Presented) An inverted-F antenna according to claim 9, comprising an F-shaped conductor pattern on a first layer of the PCB and an I-, L- or F-shaped conductor pattern on the or each other layer, wherein the or each I-, L- or F-shaped conductor pattern comprises an upright substantially coextensive with the "upright" of the F-shaped conductor pattern on the first layer.

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14. (Original) An antenna according to claim 13, wherein the or each I-, L- or F-shaped conductor pattern extends along the edge of the PCB.

15. (Previously Presented) An antenna according to claim 14, wherein the PCB is apertured between the upright of the F-shaped conductor pattern and a ground plane area.

16. (Previously Presented) An antenna according to claim 15, wherein the PCB has a slot between the upright of the F-shaped conductor pattern and a ground plane area.

17. (Currently Amended) A mobile phone including an inverted F-antenna comprising an element formed from conductor patterns on a plurality of layers including at least one buried layer of a multilayer PCB, wherein the conductor patterns are in stacked relation and interconnected through the PCB, and comprise an F-shaped conductor pattern on one layer of the PCB and an I-, L- or F-shaped conductor pattern on the or each other layer, wherein the or each I-, L- or F-shaped conductor pattern comprises an upright substantially coextensive with the upright of the F-shaped conductor pattern.

18. (Previously Presented) A mobile phone according to claim 17, wherein the conductor patterns are elongated and each longitudinally extend at the edge of the PCB.

19. (Previously Presented) A mobile phone according to claim 18, wherein the PCB is apertured adjacent to the element.

20. (Previously Presented) A mobile phone according to claim 17, wherein the PCB is apertured adjacent to the element.

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21. (Previously Presented) A mobile phone according to claim 17, comprising an F-shaped conductor pattern on a first layer of the PCB and an I-, L- or F-shaped conductor pattern on the or each other layer, wherein the or each I-, L- or F-shaped conductor pattern comprises an upright substantially coextensive with the upright of the F-shaped conductor pattern on the first layer.

22. (Previously Presented) A mobile phone according to claim 21, wherein the or each I-, L- or F-shaped conductor pattern extends along the edge of the PCB.

23. (Previously Presented) A mobile phone according to claim 22, wherein the PCB is apertured between the upright of the F-shaped conductor pattern and a ground plane area.

24. (Previously Presented) A mobile phone according to claim 23, wherein the PCB has a slot between the upright of the F-shaped conductor pattern and a ground plane area.

25. (Previously Presented) A mobile phone according to claim 17, including an antenna ground plane comprising a plurality of vias connecting ground plane regions on respective PCB layers.

26. (Previously Presented) A mobile phone according to claim 25, wherein the conductor patterns are elongated and each longitudinally extend at the edge of the PCB.

27. (Previously Presented) A mobile phone according to claim 26, wherein the PCB is apertured adjacent to the element.

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28. (Previously Presented) A mobile phone according to claim 27, wherein the PCB is apertured adjacent to the element.

29. (Previously Presented) A mobile phone according to claim 25, comprising an F-shaped conductor pattern on a first layer of the PCB and an I-, L- or F-shaped conductor pattern on the or each other layer, wherein the or each I-, L- or F-shaped conductor pattern comprises an upright substantially coextensive with the upright of the F-shaped conductor pattern on the first layer.

30. (Previously Presented) A mobile phone according to claim 29, wherein the or each I-, L- or F-shaped conductor pattern extends along the edge of the PCB.

31. (Previously Presented) A mobile phone according to claim 30, wherein the PCB is apertured between the upright of the F-shaped conductor pattern and a ground plane area.

32. (Previously Presented) A mobile phone according to claim 31, wherein the PCB has a slot between the upright of the F-shaped conductor pattern and a ground plane area.

33. (Previously Presented) An antenna in accordance with claim 1 wherein; interconnection of the conductor patterns is from the conductor patterns through the at least one buried layer.

34. (Previously Presented) An antenna in accordance with claim 33 wherein: the interconnection is by vias extending through the at least one buried layer of the PCB.

35. (Previously Presented) A mobile phone in accordance with claim 17 wherein;

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interconnection of the conductor patterns is from the conductor patterns through the at least one buried layer.

36. (Previously Presented) A mobile phone in accordance with claim 35 wherein:
the interconnection is by vias extending through the at least one buried layer of the PCB.